

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

- 1 1. (Withdrawn) A method for detecting molecules, the method comprising:
 - 2 a) determining the electronic status of a semi-conductor;
 - 3 b) establishing electronic communication between the molecules and
4 the semiconductor;
 - 5 c) subjecting the semi-conductor to energy influx;
 - 6 d) redetermining the electronic status of the semi-conductor.

Claims 2-27 (Canceled)

- 1 28. (Currently Amended) A method for manipulating biological material in vivo,
2 the method comprising:
 - 3 a) covalently attaching a semi-conductor to a first biological moiety via a
4 charge transfer intermediary to create a construct;
 - 5 b) inserting the construct into a living organism;
 - 6 c) allowing the construct to migrate to the biological material;
 - 7 d) creating a plurality of charges on the construct, wherein the size of the
8 charges and distances between the charges cause the biological material
9 to change in structure.

- 1 29. (Original) The method as recited in claim 28 wherein the biological material
2 comprises molecules selected from the group consisting of nucleotides, nitrogenous
3 heterocyclic bases, amino acids, and combinations thereof.

1 30. (Original) The method as recited in claim 28 wherein the charges are
2 created by subjecting the construct to radiation.

1 31. (Currently Amended) The method as recited in claim 30 wherein the
2 radiation has an energy ~~greater than~~ of approximately 1.6 eV.

1 32. (Currently Amended) The method as recited in claim 28 wherein the
2 radiation has energy ranging from about 1.6 eV to ~~40~~ 3.2 eV.

1 33. (Previously Presented) The method as recited in claim 28 wherein the step
2 of creating a plurality of charges further comprises subjecting the construct to radiation
3 selected from the group consisting of white light, beta rays, ultra violet light, X-rays or
4 gamma rays, alpha rays, gamma rays, and combinations thereof.

1 34. (Original) The method as recited in claim 28 wherein the biological material
2 is nucleic acid and the construct changes the nucleic acid by cleaving it.

1 35. (Original) The method as recited in claim 34 wherein the cleavage occurs
2 when the semiconductor accumulates electrons from the first biological moiety.

1 36. (Currently Amended) The method as recited in claim 28 wherein the
2 semiconductor is a metal oxide selected from the group consisting of TiO_2 , ZrO_2 , VO_2 ,
3 MnO_2 , NiO , ZnO , CuO , FeO_4 Fe_3O_4 and combinations thereof.

1 37. (Withdrawn) The method as recited in 1 wherein the biological molecule
2 is nucleic acid having base sequences interspersed with guanine.

1 38. (Withdrawn) The method as recited in claim 30 wherein the source of
2 radiation is a radioactive isotope selected from the group consisting of phosphorus-32,
3 iodine- 123, iodine-131, sulfur-35, selenium-75, technetium-99, yttrium-90 and combina-
4 tions thereof.

1 39. (Withdrawn) The method as recited in claim 37 wherein the radioactive
2 isotope is covalently attached to the semi-conductor.

1 40. (Withdrawn) The method as recited in claim 40 wherein the source of the
2 radiation is phosphorus-32.

1 41. (New) The method as recited in claim 30 wherein the radiation is
2 approximately 2 eV.